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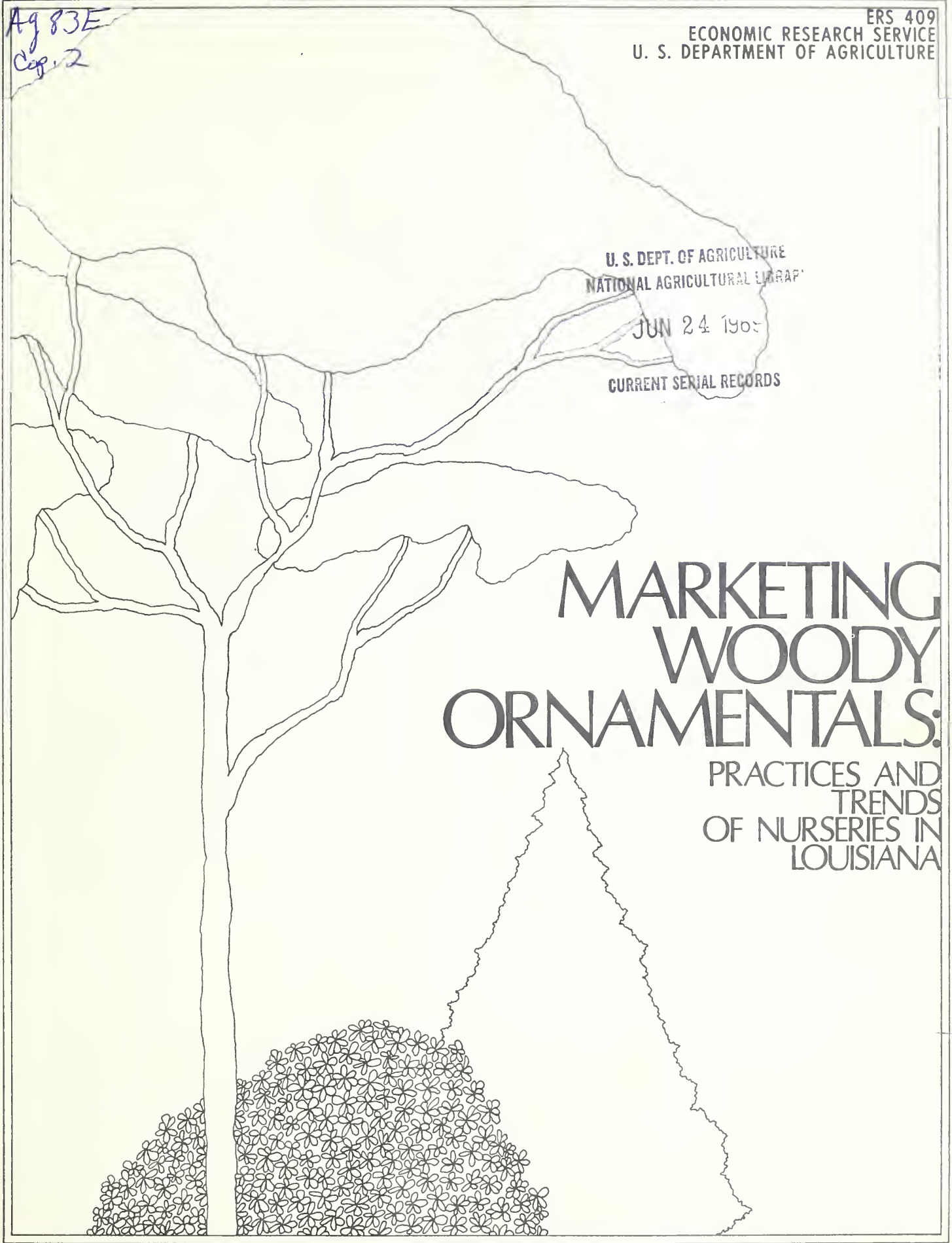

MARKETING WOODY ORNAMENTALS:

PRACTICES AND TRENDS OF NURSERIES IN LOUISIANA

PREFACE

This report is published as a contribution to the Southern Regional Marketing Research Project (SM-33), Impact of Economic and Technological Changes on the Structure and Performance of the Woody Ornamental Industry. States cooperating in the regional project were Alabama, Florida, Georgia, Kentucky, Mississippi, South Carolina, Texas, and Virginia. The Economic Research Service collected data in Louisiana, North Carolina, and Tennessee.

This report presents data collected in Louisiana by the Economic Research Service with comparisons to the regional report, Marketing Woody Ornamentals: Practices and Trends of Nurseries in the South, Bulletin No. 143 in Southern Cooperative Series, Auburn University, April 1969.

The authors are indebted to Gene Sullivan, Louisiana State University, and James Foret, University of Southwestern Louisiana, for their excellent advice and counsel in this study, and to nurserymen throughout the State who cooperated in this research effort.

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SUMMARY

Producers of woody ornamentals in Louisiana had estimated sales of $1,693,000 during 1965. This was approximately 3.25 percent of the total sales of woody ornamentals for the 11 States in the Southern Region.

Production in Louisiana was highly concentrated, with approximately 21 percent of the firms accounting for over half of the total sales.

In general, the nurseries with the higher sales volumes tended to be the older firms. The age of Louisiana's firms was similar to that of the remainder of the Southern Region. Approximately 50 percent of the firms studied were established before 1950.

The number of employees per firm did not vary directly with the number of acres operated by the firm. In the 19 Louisiana nurseries studied, there appeared to be an optimum firm size (measured in value of sales) in terms of labor efficiency. The medium-size ($25,000-$49,999) firms had the highest sales per man-hour, with a gradual decline for large and very large firms. In the Southern Region, sales per man-hour increased with size of firm throughout the sample.

Louisiana firms made few local sales, i.e., within 25 miles of the production site. In contrast, over 60 percent of the sales in the Southern Region were local. Cities in the Southern Region accounted for 85 percent of Louisiana's sales and 95 percent of these sales were made to retailers. Balled and burlapped plants were more popular than those in containers or bare-rooted. Broadleaf evergreens accounted for almost 90 percent of Louisiana's sales.

Local buyers usually took delivery of their woody ornamentals at the nursery, whereas hired carriers were usually used for transporting nonlocal sales.

Pricing appears to be one area where nurserymen need more information. Most said they sold by quality or grade (as measured by plant size) or by prices set by larger nurseries. Very few firms in the region had sufficient records to determine even the direct costs of producing each type of plant.

Production increased 55 percent from 1960 to 1965, but was expected to increase at a somewhat slower rate from 1965 to 1970. Smaller firms estimated larger increases in production than larger firms. There was a trend toward marketing a larger percentage of woody ornamentals in containers.

Insufficient skilled labor and increasing labor costs are forcing some automation aimed at reducing labor requirements. This labor problem encourages increased use of container-grown stock. Problems associated with weather and weeds are sometimes made more difficult by shortages of competent labor. Much of the research being done today has been conducted by individual firms. Such research is likely to be costly and repetitive, with dissemination of information slow, incomplete, and inaccurate. Increased cooperation between the industry and public agencies concerning methods of growing and marketing woody ornamentals would be beneficial.

MARKETING WOODY ORNAMENTALS: PRACTICES AND TRENDS OF NURSERIES IN LOUISIANA, 1965

by
Stephen M. Raleigh, Jr., and Jules V. Powell
Agricultural Economists
Economic Research Service
Marketing Economics Division

INTRODUCTION

Sales of woody ornamentals have become increasingly important in Louisiana's economy.1/ As a result, the industry needs statistical information which will serve as a basis for production and marketing policies.

Census data for all States growing woody ornamentals provide tangible evidence of Louisiana's relative position in the industry. During 1959-64, the number of acres devoted to the production of woody ornamentals increased considerably faster in Louisiana than in the Nation as a whole. The increase in total dollar volume of sales, however, was only about 25 percent of the average increase for the Nation.

The smaller increase in sales than in physical size suggests the existence of production and marketing problems among Louisiana nurserymen.

This report provides a profile of the Louisiana woody ornamental nursery industry. It contains descriptive data designed to give a general picture of the industry to reveal problem areas needing additional study by public or private agencies.

PROCEDURE

Data for this study were gathered by interviews with the managers of 19 nurseries producing woody ornamentals in Louisiana. The sample was chosen by Louisiana State University in a 1964 survey of all nurseries in the State with a sales volume of more than $2,000.

The questionnaire was prepared by the SM-33 Technical Committee (see Preface) for a study of the woody ornamental nursery industry in the Southern Region. The personal interviews were conducted by representatives of the Economic Research Service, U.S. Department of Agriculture. The data for the Louisiana study were incorporated in the SM-33 Technical Committee's report for

1/ Woody ornamentals as used in this report include broadleaf evergreens, narrowleaf evergreens, deciduous shrubs, and ornamental trees.

the Southern Region. Comparisons are made in this report with the findings of the regional study.

Data in this report often differ from those in the regional report, because the data published in the regional report have been adjusted to represent the total estimated "universe" for woody ornamentals in the 11 Southern States. Data reported here represent only the averages for the 19 firms interviewed, unless noted otherwise.

The different methods and practices for growing individual plant classes were found to vary widely from grower to grower and area to area. The size of the nurseries, in terms of acreage, had little correlation with the dollar volume of sales. Several growers with large acreages reported a comparatively low dollar sales volume. Nurseries were classified by dollar volume of sales as the most meaningful distinction among groups of firms. The distribution of firms according to this criterion was:

Size group	Annual dollar sales	Number of firms
Small	2,000-24,999	4
Medium	25,000-49,999	4
Large	50,000-99,999	7
Very large	100,000 or more	4

In classifying each business firm, the volume of dollar sales listed represents only the firm's woody ornamental operations. Some firms sold other commodities and services as well.

GENERAL CHARACTERISTICS OF WOODY ORNAMENTAL NURSERIES

A knowledge of the more important characteristics of Louisiana nurseries is helpful to an adequate understanding of the marketing patterns, trends, and problems of the industry.

Size of Business

The total dollar volume of sales for the sample of 19 firms in 1965 was $1,338,500 (table 1). An expansion factor, derived for the regional report, gives an estimated total sales figure of $1,693,000 for the entire woody ornamental nursery industry in Louisiana. This amounts to about 3.25 percent of the total sales of woody ornamentals for the 11 Southern States.

Four firms (21 percent) accounted for more than half of the total sales of the group.

Period of Operation

The oldest firm surveyed began business in 1923 and the youngest in 1964. In general, the nurseries with the larger sales volume tended to be the older

firms. More than 50 percent of the Louisiana firms were established before 1950, compared with 45 percent in the 11 Southern States (table 2).

Table 1.--Volume of sales and percentage of industry sales, 19 commercial woody ornamental nurseries, Louisiana, 1965

Size group	Firms	Average sales per firm	Total sales, all firms in sample	Percent of sales of all firms in sample
	Number	Dollars	Dollars	Percent
Small	4	14,125	56,500	4
Medium	4	33,000	132,000	10
Large	7	62,857	440,000	33
Very large	4	177,500	710,000	53
Total or average	19	70,447	1,338,500	100

Table 2.--Distribution of firms by date of establishment, 19 commercial nurseries, Louisiana, 1965

Size group	Before 1939	1940-49	1950-59	1960-65	Total reporting
	Firms				
Small	--	1	2	1	4
Medium	--	1	2	1	4
Large	2	2	3	--	7
Very large	1	3	--	--	4
Total	3	7	7	2	19

More than 60 percent of the operators had owned their current business less than 15 years in 1965 (table 3). The proportion was considerably larger for the smaller size classes--100 percent of the small firms and 75 percent of medium-size firms--than for the larger ones. This may, in part, be due to the ease of entry for small firms because of smaller capital requirements.

Type of Ownership

Types of ownership in Louisiana were not closely related to the size of the business or to the year in which the firm was established (table 4). In the 11 Southern States there was some relationship. On the average, corporations had the largest sales volumes, partnerships the next largest, and single proprietorships the smallest. There were two cooperatives in the Southern Region with sales in the same size range as partnerships. None of the nurseries surveyed was a subsidiary of or produced exclusively for a larger nursery, nor were any sales made on a contract basis. About 50 percent of the Louisiana firms

Table 3.--Year current operators acquired ownership, by size class and type of organization, 19 commercial nurseries, Louisiana, 1965

Item	Year ownership acquired				Total
	Before 1939	1940-49	1950-59	1960-65	
	Firms				
Size group:					
Small	--	--	3	1	4
Medium	--	1	2	1	4
Large	1	3	3	--	7
Very large	2	--	2	--	4
Total	3	4	10	2	19
Organization:					
Proprietorship	1	2	6	1	10
Partnership	2	1	1	1	5
Corporation	--	1	3	--	4
Total	3	4	10	2	19

Table 4.--Distribution of firms by type of business organization, year established, and age of manager, 19 commercial nurseries, Louisiana, 1965

Item	Proprietorship	Partnership	Corporation	Total firms
	Firms			
Size group:				
Small	3	--	1	4
Medium	3	1	--	4
Large	4	1	2	7
Very large	--	3	1	4
Total	10	5	4	19
Year established:				
1960-65	1	1	--	2
1950-59	5	--	2	7
1940-49	3	2	2	7
Before 1939	1	2	--	3
Total	10	5	4	19
Age of manager in 1965:				
20-39	5	2	--	7
40-59	4	3	2	9
60 and over	1	--	2	3
Total	10	5	4	19

were proprietorships, 25 percent were partnerships, and 20 percent were corporations; whereas in the region, 69 percent were proprietorships, 13 percent were partnerships, and 17 percent were corporations.

Employment Practices

Although the number of full-time employees did not vary closely with the size of the firm, the total man-hours worked by full-time and part-time labor did vary directly with the sales volume of the firm. Certain nurseries relied heavily on part-time labor during the peak work season. Other nurseries used very little part-time labor.

The policy of using or not using part-time labor did not appear to have much effect on the overall efficiency with which labor was used as measured by sales per man-hour. The larger firms in the 11 Southern States had the larger sales per man-hour. In Louisiana, the medium-size firms had much larger sales per man-hour than the large and very large firms (table 5).

The small number of firms in Louisiana raises some question about the meaning of these results, although all the large and very large firms in the State were included in the sample. The apparent lower labor efficiencies of the larger firms could result from many causes. Other income may have come from growing crops other than woody ornamentals, or managers of the larger nurseries may have exercised less managerial control.

Table 5.--Average sales per man-hour by size class, 19 commercial nurseries, Louisiana, 1965

Size group	Louisiana	Southern Region
	Dollars	
Small	1.09	2.23
Medium	3.08	---
Large	2.14	3.22
Very large	2.03	3.34
All firms	2.14	2.87

MARKETING WOODY ORNAMENTALS

Major Markets

Sales to firms in Southern cities accounted for approximately 85 percent of the Louisiana woody ornamental nursery industry's total dollar volume in 1965. The remaining sales were made in local markets (4 percent), and in States outside of the South (11 percent). The proportion of sales in Southern cities increased from 70 percent in 1956.

Houston, Tex., where 15 percent of sales were made, provided the largest single market for ornamentals grown in Louisiana. Dallas-Fort Worth was second, and New Orleans was third with 7.7 percent.

Firms in the Southern Region delivered 62 percent of their production to local markets (within 25 miles). Approximately one-quarter of the regional sales were made to firms in Southern cities. Sales to States outside of the South were approximately 11 percent for the region as well as for the State.

Marketing Outlets

All of the nurseries surveyed were located in rural areas and sold most of their plants to retail outlets in larger cities (tables 6 and 7). Some material was sold locally and to wholesalers and consumers. There are few strictly wholesale dealers in the ornamental industry compared with the florist industry.

Medium-sized firms made much more use of wholesalers as outlets than did either the small or large firms.

Sales to individual consumers were of little importance except in the immediate locality of the nurseries (fig. 1).

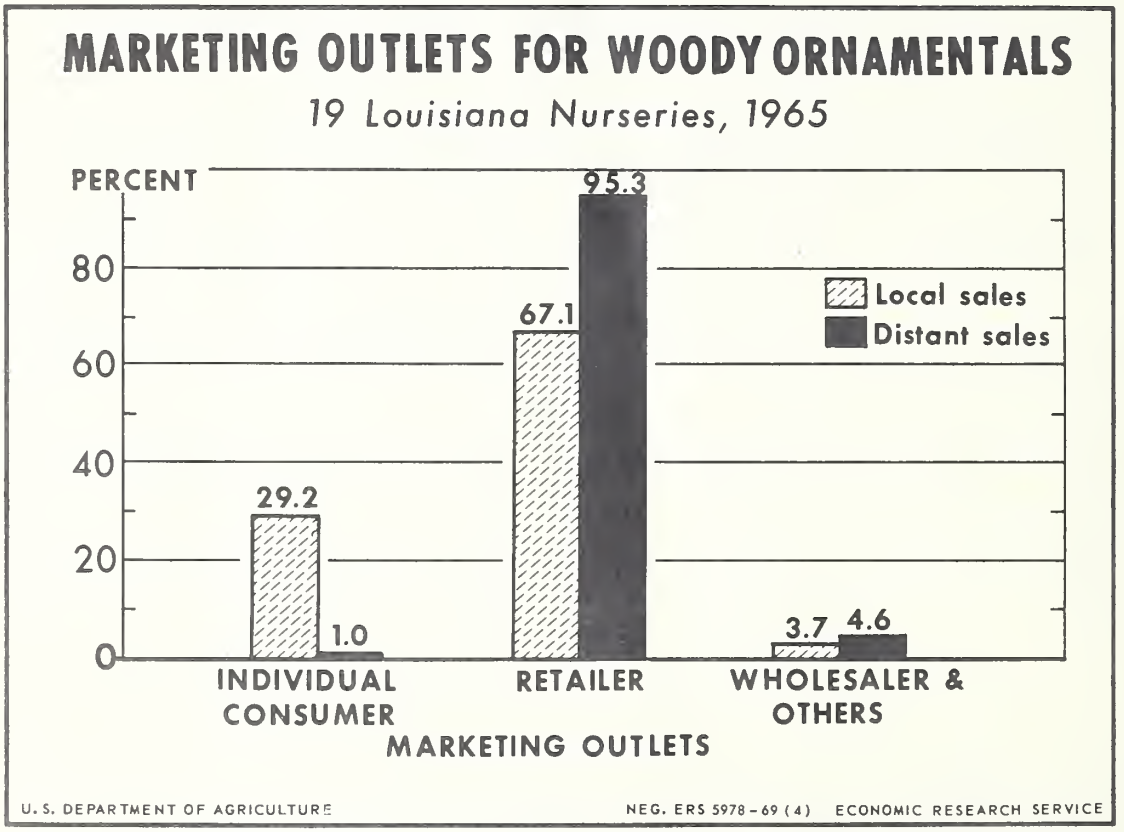

Figure 1

Marketing Forms of Woody Ornamentals

Woody ornamentals are commonly divided into four classes: Broadleaf evergreens, narrowleaf evergreens, deciduous shrubs, and shade or ornamental trees. More than 90 percent of the woody ornamental plants marketed by Louisiana nurseries in 1965 were broadleaf evergreens. While these were the major plant type produced in Louisiana, the State's production accounted for only 6 percent of the total broadleaf evergreens marketed in the Southern Region. Narrowleaf evergreens accounted for approximately 5 percent of plant sales and shade or ornamental trees for the remainder of the woody ornamental plants sold in the State (table 8). None of the latter three types of woody ornamentals accounted for more than 1 percent of total sales in the Southern Region.

Table 6.--Geographic distribution of sales of woody ornamentals, 19 commercial nurseries, Louisiana, 1965

Market area	Estimated Sales	
	Dollars	Percent
Local sales (within 25 miles)	54,860	4.10
Southern cities:		
Houston, Tex.	201,015	15.02
Dallas-Fort Worth, Tex.	179,200	13.39
New Orleans, La.	103,080	7.70
Atlanta, Ga.	73,065	5.46
Memphis, Tenn.	59,845	4.47
Jackson, Miss.	47,000	3.51
Baton Rouge, La.	46,690	3.49
Birmingham, Ala.	44,510	3.35
Shreveport, La.	29,100	2.17
Corpus Christi, Tex.	6,500	.48
Monroe, La.	4,400	.33
San Antonio, Tex.	3,400	.24
Miami, Fla.	3,000	.22
All others	333,730	24.93
Total	1,134,535	84.76
States outside of South:		
Arkansas	57,125	5.90
Oklahoma	82,780	4.55
Illinois	6,000	.45
Maryland	1,600	.12
Missouri	1,600	.12
Total	149,105	11.14
Grand total	1,338,500	100.00

Table 7.--Marketing outlets for nonlocal sales of woody ornamentals by class size, 19 commercial nurseries, Louisiana, 1965

Size group	Average nonlocal sales	Individual consumer	Retailer	Wholesaler	Landscape contractor	Other	Total
	Dol.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Small	10,683	--	95.0	4.6	0.4	--	100.0
Medium	30,225	--	63.8	31.5	--	4.7	100.0
Large	61,157	2.1	97.4	.5	--	--	100.0
Very large	171,250	--	99.0	1.0	--	--	100.0
Average	67,197	.1	95.3	4.0	.1	.5	100.0

Table 8.--Forms in which woody ornamentals were marketed, 19 commercial nurseries, Louisiana, 1965

Class	Liners	Containers	Balled and burlapped	Total plants
	Plants			
Broadleaf evergreens	831,000	823,900	1,188,160	2,843,060
Narrowleaf evergreens	---	43,400	125,900	169,300
Deciduous shrubs	---	20,900	34,330	55,230
Shade and ornamental trees	---	16,700	40,150	56,850
Total	831,000	904,900	1,388,540	3,124,440

Woody ornamentals are marketed in four different forms--as rooted cuttings, as liners, in containers, and balled and burlapped (table 8). Balled and burlapped plants are the most popular form, accounting for 45 percent of the total sales in Louisiana. This is close to the average for the Southern Region. None of the firms interviewed sold rooted cuttings. Approximately 25-35 percent of all plants sold in Louisiana, but only 20-25 percent of those in the Southern Region, were marketed in containers. A few firms specialized in container-grown plant material because of the smaller acreage and lower labor requirement to produce salable plants.

Although there is wide variation among firms in the industry with respect to the genera of plants produced, a few plants are grown by most of the firms in the State and in the Southern Region. These include Rhododendron, Ilex, Juniperus, Pinus, Spiraea, and Ligustrum (tables 9, 10, 11, 12, and 13).

Table 9.--Broadleaf evergreens produced and forms in which marketed, 19 commercial nurseries, Louisiana, 1965

Genus	Liners	Containers	Balled and burlapped	Total plants
		Plants		
Abelia	---	500	12,000	12,500
Aucuba	---	2,000	---	2,000
Berberis	---	2,000	500	2,500
Buxus	---	88,000	62,500	150,500
Camellia	---	20,400	8,700	29,100
Cleyera	---	1,000	17,000	18,000
Elaeagnus	---	---	8,360	8,250
Ficus	---	---	3,210	3,210
Gardenia	---	8,000	114,500	122,500
Ilex	1,000	133,700	211,000	345,200
Ligustrum	---	12,500	281,500	294,000
Magnolia	---	1,200	7,700	8,900
Nandina	---	---	6,500	6,500
Osmanthus	---	---	500	500
Photinia	---	3,000	26,400	29,400
Pittosporum	---	---	3,000	3,100
Podocarpus	---	---	8,000	8,000
Pyracantha	---	12,700	---	12,700
Rhododendron	300,000	265,500	213,200	778,700
Viburnum	---	---	2,000	2,000
All others	530,000	273,400	1,700	1,005,100
Total	831,000	823,900	1,188,160	2,843,060

Table 10.--Narrowleaf evergreens produced and forms in which marketed, 19 commercial nurseries, Louisiana, 1965

Genus	Containers	Balled and burlapped	Total plants
	Plants		
Cedrus	---	3,500	3,500
Cunninghamia	---	4,500	4,500
Juniperus	12,000	53,700	65,700
Picea	100	500	600
Pinus	21,800	42,750	64,550
Taxodium	4,000	550	4,550
Taxus	1,700	18,500	20,200
Thuja	---	1,300	1,300
All others	3,800	600	4,400
Total	43,400	125,900	169,300

Table 11.--Deciduous shrubs produced and forms in which marketed, 19 commercial nurseries, Louisiana, 1965

Genus	Containers	Balled and burlapped	Total plants
		Plants	
Chaenomeles	---	500	500
Forsythia	---	500	500
Hibiscus	10,000	---	10,000
Hydrangea	2,500	3,700	6,200
Lagerstroemia	1,500	1,100	2,600
Ligustrum	---	3,000	3,000
Magnolia	300	---	300
Rhododendron	100	5,030	5,130
Spiraea	3,000	19,400	22,400
Weigela	---	500	500
All others	3,500	600	4,100
Total	20,900	34,330	55,230

Table 12.--Shade and ornamental trees produced and forms in which marketed, 19 commercial nurseries, Louisiana, 1965

Genus	Containers	Balled and burlapped	Total plants
		Plants	
Acer	---	7,800	7,800
Albizzia	100	700	800
Betula	---	2,150	2,150
Cercis	---	100	100
Cornus	600	10,100	10,700
Fraxinus	---	200	200
Liquidambar	---	2,000	2,000
Liriodendron	1,300	500	1,800
Magnolia	1,500	500	2,000
Malus	400	---	400
Platanus	2,000	1,000	3,000
Populus	---	500	500
Quercus	8,200	8,850	17,050
Salix	---	3,000	3,000
Ulmus	100	1,750	1,850
All others	2,500	1,000	3,500
Total	16,700	40,150	56,850

Table 13.--The five most important genera in each class of woody ornamental produced in Louisiana and the Southern Region, 1965

Louisiana	Southern Region
Broadleaf evergreens	
Rhododendron*	Rhododendron*
Ilex	Ilex
Ligustrum	Ligustrum
Buxus	Gardenia
Gardenia	Buxus
Narrowleaf evergreens	
Juniperus	Juniperus
Pinus	Pinus
Taxus	Thuja
Taxodium	Taxus
Cunninghamia	Tsuga
Deciduous shrubs	
Spiraea	Ligustrum
Hydrangea	Rosa**
Rhododendron	Hibiscus
Ligustrum	Forsythia
Lagerstroemia	Spiraea
Shade and ornamental trees	
Quercus	Cornus
Cornus	Acer
Acer	Populus
Platanus	Prunus
Salix	Malus

* Includes Azalea.
** Influenced by extremely large production in one area.

Marketing Practices

Advertising

Of the nurseries surveyed, 74 percent in Louisiana and 63 percent in the region indicated that they advertise their plants for sale. The advertising media employed included classified sections of telephone directories, trade magazines, conventions, catalogs, billboards, and local papers. In general,

the first three--directories, trade magazines, and conventions--were listed as the most important means of contacting potential buyers of Louisiana nursery products.

Labeling

Labels or brands were used by 42 percent of the firms in the State and 61 percent of the nurseries in the Southern Region. Surprisingly, none of the large firms in Louisiana sold plants under their own label; they used no identifying label. None of the Louisiana firms, and only 5 percent of the firms in the Southern Region, packaged plants under a buyer's label.

Grading

There are no specific standard grades of nursery plants. Prices for plants in containers are partially based on the size of the container. Several nurserymen indicated that by merely moving a plant into a larger container, they could obtain a higher price.

Competition among the nurserymen is primarily on a price basis. In the absence of specific grades most growers producing high-quality products hesitate to charge higher prices than their competitors for their plants. A few growers, however, were able to obtain premium prices for their products. Probably more nurseries producing high-quality plants could successfully demand premium prices if they could convince consumers of the superior quality of their products.

Credit

More than one-half the Louisiana nurseries reported problems of nonpayment or slow payment after extending credit to customers, compared with only one-third in the Southern Region. On the other hand, none of the nurseries reported having trouble in obtaining credit from suppliers.

Transportation

Woody ornamentals were primarily shipped from nurseries to buyers in trucks. Plants sold to local outlets were usually picked up at the nursery in the buyer's truck, while hired carriers mostly were employed for the transportation of woody ornamentals to distant cities in the South and to States outside of the South. Only about 2 percent of the sales were delivered by sellers in their own trucks (table 14).

Few firms indicated that they had any problems with transportation. Two-thirds of the Louisiana firms, but only half of the regional ones, said that in certain circumstances they could split a shipment among two or more customers.

Table 14.--Methods of transporting woody ornamentals to buyers, by type of sale, 19 commercial nurseries, Louisiana, 1965

Type of sales	Buyer's truck	Seller's truck	Hired carriers	Total
	Percent			
Local sales	75	5	20	100
Sales to Southern States	32	2	66	100
Sales to States outside South	42	0	58	100
Average of all sales	45	2	53	100

Pricing Policy

Forty-two percent of the Louisiana nurserymen interviewed indicated that quality or grade was the most important factor they considered in determining the prices of their products; 21 percent indicated that the prices obtained by larger nearby nurseries were the most important factor; and 16 percent, cost of production. Firms in the Southern Region gave a markedly different response to this question; 35 percent indicated that the prices of larger nearby nurseries were most important; 30 percent, cost of production; and 12 percent, quality or grade.

Most nursery price lists appear to be based on the size of the plants or the containers, and this appears to be the most important factor in what nurserymen refer to as grades. Also it does not appear from observation of nursery records that many have accounts that would give reliable indications of costs of production per plant, and when nurserymen were asked if they could determine cost per plant approximately 70 percent said they could not.

Pricing appears to be an area of considerable confusion among nurserymen.

MARKETING TRENDS OF WOODY ORNAMENTALS

Production Changes

Total plant production of woody ornamentals increased 55 percent from 1960 to 1965 in Louisiana compared with 36 percent in the Southern Region. The estimated 32-percent increase in production anticipated by growers from 1965 to 1970 for Louisiana is about twice that for the Southern Region. In terms of actual number of plants, the increase from 1965 to 1970 will be almost as large as the increase from 1960 to 1965 (table 15).

The large planned production increase from 1965 to 1970 for the small firms is in part due to the generally optimistic outlook of the owners of these firms,

Table 15.--Past and prospective changes in the production of woody ornamentals by size of firm, 19 commercial nurseries, Louisiana, 1965

Size group	Production			Increase in production			
	1960	1965	1970	1960-65		Estimated 1965-70	
	Plants	Plants	Plants	Plants	Percent	Plants	Percent
Small	75,830	73,200	842,715	-2,630	-3.46	769,515	1,051.25
Medium	96,573	205,010	222,563	108,437	112.28	17,553	7.88
Large	465,590	740,830	816,030	275,240	59.12	75,200	10.15
Very large	1,377,515	2,105,400	2,232,125	727,885	52.84	126,725	6.02
Total industry	2,015,508	3,124,440	4,113,433	1,108,932	55.02	988,993	31.65

Table 16.--Past and prospective changes in the production of woody ornamentals by method of preparation, 19 commercial nurseries, Louisiana, 1965

Method of preparation	Production			Increase in production			
	1960	1965	1970	1960-65		Estimated 1965-70	
	Plants	Plants	Plants	Plants	Percent	Plants	Percent
Liners	543,000	831,000	831,500	288,000	53.04	500	0.06
Containers	567,666	904,900	1,519,925	337,234	59.41	615,025	67.97
Field grown	904,842	1,388,540	1,762,008	483,698	53.46	373,468	26.90
Total	2,015,508	3,124,440	4,113,433	1,108,932	55.02	988,993	31.65

the rapid expansion of some nurseries, and the relatively small amount of capital needed for expansion.

An increasing share of woody ornamentals are being marketed in containers. Louisiana nurserymen anticipate an increase of 67 percent in sales of plants in containers (table 16). This is much larger than for the Southern Region.

Containers offer the nurseryman several advantages including easier handling, economy in acreage used, significant labor savings, marketing flexibility and ease. However, the danger of damage from frost is increased. There was a larger percentage increase in the production of broadleaf evergreens in containers during 1960-65 than in other forms (table 17). However, since 67 percent is already produced in this manner, opportunities for further increases are limited. In the other classes of plants, where a much smaller percentage has been produced in containers, large increases in the use of containers are expected.

Preference Trends

About two-thirds of the nurseries surveyed indicated that there had been recent changes in the preferences of customers for plants and the form in which purchased. They indicated that in general, the customers were demanding more dwarf plants, more hardy deciduous or freeze-resistant plants, more "sculptured" plants, and better quality plants of all sorts. The nurseries also noted changes in preference for different plant forms. The most striking, reported by one-third of the nurseries, was an increased preference for plants in containers and fewer balled and burlapped plants.

Business Expansion

More than half the nurserymen (63 percent) planned to expand their businesses by 1970. Those who had no plans for expansion listed labor problems as the single most important inhibiting factor. Other factors mentioned were increased competition, low prices, and high opportunity costs when considering alternatives such as real estate and retirement.

ECONOMIC PROBLEMS

In general, the problems of the woody ornamental nursery industry today are much the same as they were reported to be 10 years ago.2/ These problems, rather than diminishing, have expanded due to changing environment and increased size.

2/ A. C. Harper, R. H. Hanchey, and M. D. Woodin, Production of Nursery and Greenhouse Crops in Louisiana, Bulletin No. 511, Agricultural Experiment Station, Louisiana State University and Agricultural and Mechanical College, June 1957.

Table 17.--Past and prospective changes in the production of woody ornamentals, by plant class and method of preparation, 19 commercial nurseries, Louisiana, 1965

Plant class and method of preparation	Production			Increase in production			
	1960	1965	1970	1960-65		Estimated 1965-70	
	Plants	Plants	Plants	Plants	Percent	Plants	Percent
Broadleaf evergreens:							
Liners	528,000	801,000	801,500	273,000	51.70	500	0.06
Containers	499,626	821,900	1,182,125	322,274	64.50	360,225	43.83
Field grown	776,912	1,188,060	1,461,738	411,148	52.92	273,678	23.04
Class total	1,804,538	2,810,960	3,445,363	1,006,422	55.77	634,403	22.57
Narrowleaf evergreens:							
Liners	---	---	---	---	---	---	---
Containers	32,250	43,400	67,400	11,150	34.57	24,000	55.30
Field grown	80,095	125,800	160,215	45,705	57.06	34,415	27.36
Class total	112,345	169,200	227,615	56,855	50.61	58,415	34.52
Deciduous plants:							
Liners	---	---	---	---	---	---	---
Containers	21,900	20,900	223,700	-1,000	-4.57	202,800	970.33
Field grown	20,996	34,330	69,155	13,334	63.51	34,825	101.44
Class total	42,896	55,230	292,855	12,334	28.75	237,625	430.25
Ornamental trees:							
Liners	---	---	---	---	---	---	---
Containers	10,890	16,700	44,700	5,810	53.35	28,000	167.66
Field grown	26,639	40,150	70,700	13,511	50.72	30,550	76.09
Class total	37,529	56,850	115,400	19,321	51.48	58,550	102.99
Vines:							
Liners	15,000	30,000	30,000	15,000	100.00	---	---
Containers	3,000	2,000	2,000	-1,000	-33.33	---	---
Field grown	200	200	200	---	---	---	---
Class total	18,200	32,200	32,200	14,000	76.92	---	---
Grand total	2,015,508	3,124,440	4,113,433	1,108,932	55.02	988,993	31.65

Labor Problems

The most acute problem appears to be labor (fig. 2). Tangible evidence of this can be found in the abandoned blocks of older nursery stock that have been neglected because of high labor costs connected with the balling and burlapping of these plants. Insufficient skilled labor and increasing labor costs are encouraging the development of automation aimed at reducing labor requirements for nursery operations.

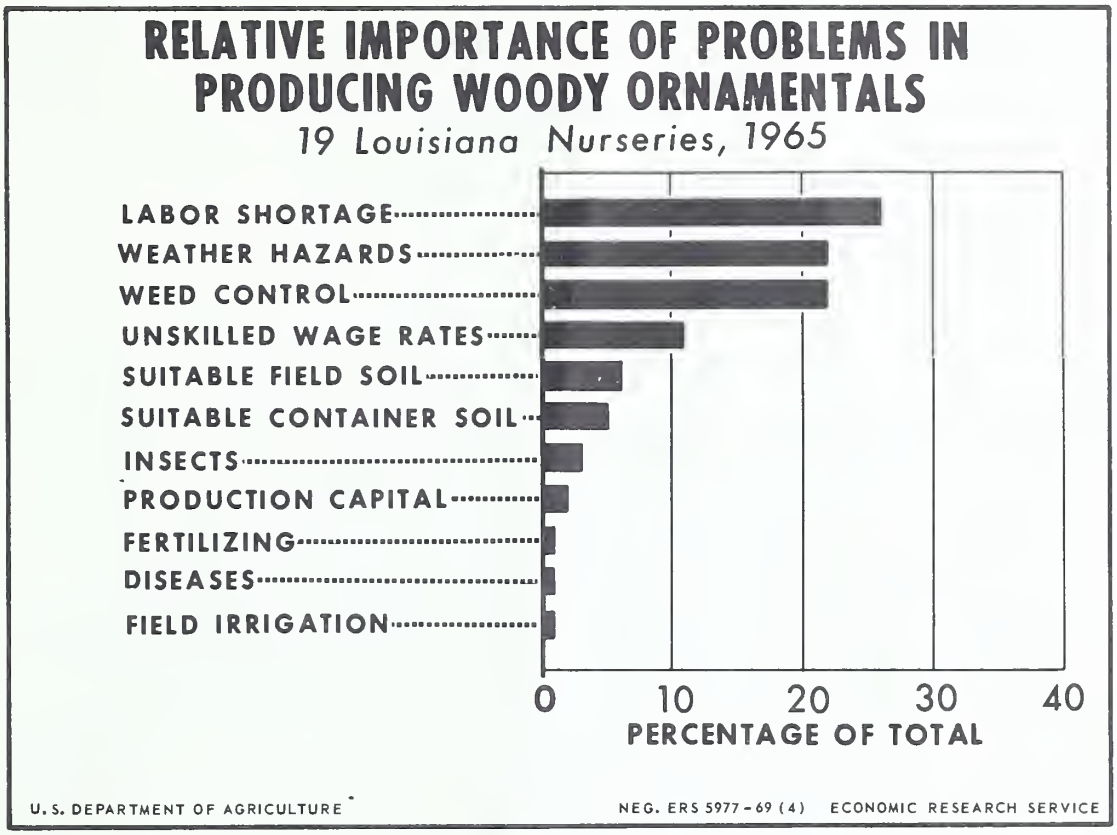

Figure 2

Because of these problems, the method of growing plants is also changing. Plants grown in containers rather than in fields permit more fully automated production processes. As an example, irrigation and fertilization can be controlled by one man and the problem of cultivation for weed control is virtually eliminated. In addition, the trend to containers helps to eliminate the seasonality of workloads as plants can be transferred and marketed without concern for new growth and wet field conditions.

The rapid growth of the industry and new minimum wage legislation have intensified labor problems for Louisiana nurserymen. Expanding industrial development forces nurseries to compete on a price basis for the available labor. The nurserymen say that the minimum wage legislation, not yet in effect for

nurseries at the time of the survey, promises additional effects on growing methods and on the rate of automation.

Management Planning

The inevitable question of what and how much to grow constantly presents the nurseryman with a problem of overriding importance that could largely determine his future prosperity. Forty-two percent of the nurserymen indicated they had inadequate information concerning the market for their products. Since there is at least a 2-year period between the original planting and the final marketing of a plant, the need for accurate market information as an aid to planning is evident. A serious misjudgment or miscalculation could result in bankruptcy. In addition, Louisiana nurseries grow very few plants under contract as is common in some other States. This increases the need for market information by Louisiana nurserymen.

Weather Hazards

Weather hazards are a continuing problem of the nurseryman. The increase in container growing has reduced the dry weather hazard by making irrigation easier. The freeze hazard, however, has increased since a quick frost can damage plants in containers more easily than those grown in the field. For this reason, many nurserymen indicated a tendency to grow plants that were more hardy and more freeze resistant than varieties formerly used.

Production Problems

Problems include finding ways of growing and marketing the best quality of plants, control of insects, diseases, weeds, fertilization, irrigation, and use of proper soil types. Production problems have been studied at universities and State experiment stations for many years, so that most growers are familiar with the problems and some of the solutions.

Research and Development

Most Louisiana woody ornamental nurseries have grown with very little outside experimental or technical assistance. Methods of growing, cultivation, and marketing vary greatly, even in small areas. A considerable amount of the marketing research being done today is undertaken by individual growers, with the result that the work sometimes is costly and progress slow. Also, there is little dissemination of new information to other growers. Increased State, Federal, and industry assistance concerning the best methods of operation would be of great benefit to the nurserymen.